

**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Samuel Lin Examiner #: 79120 Date: 8-11-03  
 Art Unit: 1653 Phone Number 306-3443 Serial Number: 08529232  
 Mail Box and Bldg/Room Location: 9D08 Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

*Please search peptide sequence as the  
attached.*

*Thanks!*

*Sam Lin*

*C. Chan  
Rush*

**STAFF USE ONLY****Type of Search****Vendors and cost where applicable**

Searcher: \_\_\_\_\_ NA Sequence (#) \_\_\_\_\_ STN \_\_\_\_\_  
 Searcher Phone #: \_\_\_\_\_ AA Sequence (#) \_\_\_\_\_ Dialog \_\_\_\_\_  
 Searcher Location: \_\_\_\_\_ Structure (#) \_\_\_\_\_ Questel/Orbit \_\_\_\_\_  
 Date Searcher Picked Up: \_\_\_\_\_ Bibliographic \_\_\_\_\_ Dr. Link \_\_\_\_\_

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=> fil hcaplu  
FILE 'HCAPLUS' ENTERED AT 15:59:34 ON 11 AUG 2003  
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FILE COVERS 1907 - 11 Aug 2003 VOL 139 ISS 7  
FILE LAST UPDATED: 10 Aug 2003 (20030810/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d stat que  
L3 4 SEA FILE=REGISTRY ABB=ON GGGG.DYEPIPEEA/SQSP  
L4 5 SEA FILE=HCAPLUS ABB=ON L3

=> d ibib abs hitrn 14 1-5

L4 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS ON STN  
ACCESSION NUMBER: 2002:168720 HCAPLUS  
DOCUMENT NUMBER: 136:382133  
TITLE: The Methyl Group of N.alpha.(Me)Arg-containing Peptides Disturbs the Active-site Geometry of Thrombin, Impairing Efficient Cleavage  
AUTHOR(S): Friedrich, Rainer; Steinmetzer, Torsten; Huber, Robert; Stuerzebecher, Joerg; Bode, Wolfram  
CORPORATE SOURCE: Abteilung Strukturforschung, Max-Planck-Institut fuer Biochemie, Martinsried, 82152, Germany  
SOURCE: Journal of Molecular Biology (2002), 316(4), 869-874  
CODEN: JMOBAK; ISSN: 0022-2836  
PUBLISHER: Academic Press  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Bivalent peptidic thrombin inhibitors consisting of an N-terminal D-cyclohexylalanine-Pro-N.alpha.(Me)Arg active-site fragment, a flexible polyglycine linker, and a C-terminal hirugen-like segment directed towards the fibrinogen recognition exosite inhibit thrombin with Ki values in the picomolar range, remaining stable in buffered soln. at pH 7.8 for at least 15 h. In order to investigate the structural basis of this increased stability, the most potent of these inhibitors, I-11 (Ki = 37pM), contg. an N.alpha.(Me)Arg-Thr bond, was crystd. in complex with human .alpha.-thrombin. X-ray data were collected to 1.8 .ANG. resohn. and the crystal structure of this complex was detd. The Fourier map displays clear electron d. for the N-terminal fragment and for the exosite binding segment. It indicates, however, that in agreement with Edman sequencing, the peptide had been cleaved in the crystal, presumably due to the long

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incubation time of 14 days needed for crystn. and data collection. The N.alpha.(Me) group is directed toward the carbonyl oxygen atom of Ser214, pushing the Ser195 O.gamma. atom out of its normal site. This structure suggests that upon thrombin binding, the scissile peptide bond of the intact peptide and the Ser195 O.gamma. are sepd. from each other, impairing the nucleophilic attack of the Ser195 O.gamma. toward the N.alpha.(Me)Arg carbonyl group. In the time-scale of two weeks, however, cleavage geometries favored by the crystal allow catalysis at a slow rate. (c) 2002 Academic Press.

IT 428499-57-4D, complexes with thrombin

RL: PRP (Properties)

(crystal structure indicates Me group of N.alpha.(Me)Arg-contg. peptide inhibitor impairs cleavage by disturbing active site geometry of human thrombin)

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2003 ACS ON STN

ACCESSION NUMBER: 2000:94674 HCAPLUS

DOCUMENT NUMBER: 132:262009

TITLE: Design of P1' and P3' Residues of Trivalent Thrombin Inhibitors and Their Crystal Structures

AUTHOR(S): Slon-Usakiewicz, Jacek J.; Sivaraman, J.; Li, Yunge;

Cyglyer, Mirosław; Konishi, Yasuo

CORPORATE SOURCE: Biotechnology Research Institute, National Research Council of Canada, Montreal, QC, H4P 2R2, Can.

SOURCE: Biochemistry (2000), 39(9), 2384-2391

CODEN: BICHAW; ISSN: 0006-2960

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Synthetic bivalent thrombin inhibitors comprise an active site blocking segment, a fibrinogen recognition exosite blocking segment, and a linker connecting these segments. Possible nonpolar interactions of the P1' and P3' residues of the linker with thrombin S1' and S3' subsites, resp., were identified using the "Methyl Scan" method [Slon-Usakiewicz et al. (1997) Biochem. 36, 13494-13502]. A series of inhibitors (4-tert-butylbenzenesulfonyl)-Arg-(D-pipecolic acid)-Xaa-Gly-Yaa-Gly-.beta.Alu-Asp-Tyr-Glu-Pro-Ile-Pro-Glu-Glu-Ala-(.beta.-cyclohexylalanine)-(D-Glu)-OH, in which nonpolar P1' residue Xaa or P3' residue Yaa was incorporated, were designed and improved the affinity to thrombin. Substitution of the P3' residue with D-phenylglycine or D-Phe improved the Ki value to (9.5 +/- 0.6) .times. 10-14 or 1.3 +/- 0.5 .times. 10-13 M, resp., compared to that of a ref. inhibitor with Gly residues at Xaa and Yaa residues (Ki = (2.4 +/- 0.5) .times. 10-11 M). Similarly, substitution of the P1' residue with L-norleucine or L-.beta.- (2-thienyl)alanine lowered the Ki values to (8.2 +/- 0.6) .times. 10-14 or (5.1 +/- 0.4) .times. 10-14 M, resp. The linker Gly-Gly-.beta.Alu of the inhibitors in the previous sentence was simplified with 12-aminododecanoic acid, resulting in further improvement of the Ki values to (3.8 +/- 0.6) .times. 10-14 or (1.7 +/- 0.4) .times. 10-14 M, resp. These Ki values are equiv. to that of natural hirudin (2.2 .times. 10-14 M), yet the size of the synthetic inhibitors (2 kD) is only one-third that of hirudin (7 kD). Two inhibitors, with L-norleucine or L-.beta.- (2-thienyl)alanine at the P1' residue and the improved linker of 12-aminododecanoic acid, were crystd. in complex with human .alpha.-thrombin. The crystal structures of these complexes were solved and refined to 2.1 .ANG. resoln. The Lys60F side chain of thrombin moved significantly and formed a large nonpolar S1' subsite to accommodate the bulky P1' residue.

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IT 197518-05-1

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study) (design of P1' and P3' residues of trivalent thrombin inhibitors and their crystal structures)

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1999:271384 HCAPLUS

DOCUMENT NUMBER: 130:297001

TITLE: Preparation of trivalent thrombin inhibitors

INVENTOR(S): Konishi, Yasuo; Slon, Jacek

PATENT ASSIGNEE(S): National Research Council of Canada, Can.

SOURCE: PCT Int. Appl., 46 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9919356	A1	19990422	WO 1997-CA745	19971015
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9746122	A1	19990503	AU 1997-46122	19971015
AU 761011	B2	20030529		
EP 1023324	A1	20000802	EP 1997-944656	19971015
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
NZ 503669	A	20010928	NZ 1997-503669	19971015
JP 2001519442	T2	20011023	JP 2000-515927	19971015
			WO 1997-CA745	A 19971015

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 130:297001

AB Trivalent thrombin inhibitors AS-Z-P (AS represents an S subsite blocking segment, P represents a fibrinogen recognition exosite blocking segment, Z represents a S' subsite blocking segment) or their pharmaceutically acceptable salts, were prepd. The S' subsite blocking segment, besides binding to the thrombin S' subsites, connects the S subsite blocking segment and the fibrinogen recognition exosite blocking segment. This binding of Z segment together with the bindings of the AS and P segments, contributes to improve the affinity of the inhibitors significantly. The AS blocking segment and the P segment preferably have the sequence Bbs-Arg-D-Pip- (Bbs = 4-tert-butylbenzenesulfonyl, Pip = piperidic acid) and Asp-Tyr-Glu-Pro-Ile-Pro-Glu-Glu-Ala-Cha-D-Glu-OH (Cha = .beta.-cyclohexylalanine), resp. The Z segment preferably has the sequence Xaa-Gly-Yaa-Gly-.beta.-Ala where: Xaa = Gly, Ala, D-Ala, Val, D-Val, Phe, D-Phe, His, D-His, Nva, D-Nva, Ile, D-Ile, Nle, D-Nle, .alpha.Aib (2-aminoisobutyric acid), Phg (phenylglycine), D-Phg, Thi (.beta.- (2-thienyl)alanine), D-Thi, Chg (cyclohexylglycine), etc. Thus, Bbs-Arg-D-Pip-Thi-Gly-Gly-.beta.-Ala-Asp-Tyr-Glu-Pro-Ile-Pro-Glu-Glu-Ala-Cha-D-Glu-OH, having a Ki value of 0.051 +/- 0.004 pM, was prepd. by

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the solid phase method using a conventional Fmoc procedure. The preferred inhibitors have  $K_i$  values smaller than 1 pM and are useful for treating or preventing vascular diseases.

IT 197518-05-1P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(prepn. of trivalent thrombin inhibitors)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

✓ L4 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2003 ACS ON STN

ACCESSION NUMBER: 1997:660911 HCAPLUS

DOCUMENT NUMBER: 127:316126

TITLE: Nonpolar interactions of thrombin S' subsites with its bivalent inhibitor: methyl scan of the inhibitor linker

AUTHOR(S): Slon-Usakiewicz, Jacek J.; Purisima, Enrico; Tsuda, Yuko; Sulea, Traian; Pedyczak, Artur; Fethiere, James; Cygler, Mirosław; Konishi, Yasuo

CORPORATE SOURCE: National Research Council of Canada, Biotechnology Research Institute, Montreal, QC, H4P 2R2, Can.

SOURCE: Biochemistry (1997), 36(44), 13494-13502

CODEN: BICHAW; ISSN: 0006-2960

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We have designed bivalent thrombin inhibitors, consisting of a nonsubstrate type active site blocking segment, a hirudin-based fibrinogen recognition exosite blocking segment, and a linker connecting these segments. The inhibition provided by the bivalent inhibitors with various linker lengths revealed that a min. of 15 atoms was required for simultaneous binding of the two blocking segments of the inhibitor to thrombin without significant distortion. The crystal structure of the inhibitors with a 16-atom linker showed some conformational flexibility in the linker portion which still lies deep in the groove joining the active site and the fibrinogen recognition exosite. Since the thrombin S' subsites are not well characterized, we designed a new strategy to search for possible nonpolar interactions between the linker and the thrombin S' subsites. This strategy, the "methyl scan", is based on the incorporation of a Me side chain at each atom position of the linker by using sarcosine, D,L-alanine, D,L-3-aminoisobutyric acid, or N-methyl-beta-alanine. The Me groups on the second and the eighth atom positions of the linker, which correspond to the side chains of the P1' and the P3' residues, resp., improved the affinity of the inhibitors significantly. Further study of the stereospecificity showed that L-Ala at the P1' residue and D-Ala at the P3' residue preferably improved the affinity of the inhibitors 20- and 25-fold, resp. Mol. modeling calcns. using a Me probe were also carried out to identify favorable nonpolar interacting sites on the thrombin surface. Two sites were identified in the vicinity of the P1' and the P3' residues, supporting the validity of the Me scan method. Thus, this study has improved our understanding of the interactions taking place in this groove. In particular, we have been able to show that some specific structural features, such as hydrophobic complementarity between the linker and the thrombin S' subsites, could be exploited and make these inhibitors trivalent.

IT 197518-05-1

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study);

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PROC (Process)  
(as thrombin inhibitor; nonpolar interactions of thrombin S' subsites  
with its bivalent inhibitor: Me scan of inhibitor linker)

IT 197518-27-7

RL: BAC (Biological activity or effector, except adverse); BPR (Biological  
process); BSU (Biological study, unclassified); BUU (Biological use,  
unclassified); BIOL (Biological study); PROC (Process); USES (Uses)  
(as thrombin inhibitor; nonpolar interactions of thrombin S' subsites  
with its bivalent inhibitor: Me scan of inhibitor linker)

L4 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1996:695912 HCAPLUS

DOCUMENT NUMBER: 126:14333

TITLE: Arginyl methylketones in the design of highly potent  
bivalent thrombin inhibitors

AUTHOR(S): Steinmetzer, T.; Rehse, P.; Zhu, B. Y.; Gibbs, B. F.;  
Lefebvre, J.; Cygler, M.; Konishi, Y.

CORPORATE SOURCE: Biotechnology Research Institute, National Research  
Council Canada, Montreal, QC, H4P 2R2, Can.

SOURCE: Peptides: Chemistry, Structure and Biology,  
Proceedings of the American Peptide Symposium, 14th,  
Columbus, Ohio, June 18-23, 1995 (1996), Meeting Date  
1995, 356-357. Editor(s): Kaumaya, Pravin T. P.;  
Hodges, Robert S. Mayflower Scientific: Kingswinford,  
UK.

CODEN: 63NTAF

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Synthetic inhibitors, which mimic the binding mode of hirudin to thrombin,  
have been previously developed. They are composed of an active site  
inhibitor segment, a fibrinogen recognition exosite inhibitor segment, and  
a linker connecting these parts. Arginyl methylketones derivs. were  
incorporated in the P1-P1' region of the active site inhibitor segment and  
enhanced the binding affinity of the inhibitors. The synthesis and  
inhibitory potency of new bivalent thrombin inhibitors is presented.

IT 183969-28-0P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU  
(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
(Uses)  
(arginyl methylketones in design of highly potent bivalent thrombin  
inhibitors)

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STRUCTURE FILE UPDATES: 10 AUG 2003 HIGHEST RN 563979-18-0

DICTIONARY FILE UPDATES: 10 AUG 2003 HIGHEST RN 563979-18-0

TS/CA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

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<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d sqide can tot 13

L3 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN  
RN 428499-57-4 REGISTRY  
CN D-Glutamic acid, 3-cyclohexyl-D-alanyl-L-prolyl-N2-methyl-L-arginyl-L-threonylglycylglycylglycylglycylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl- (9CI) (CA INDEX NAME)  
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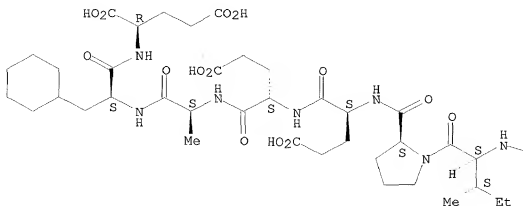
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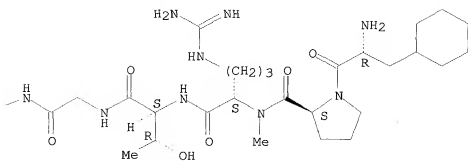
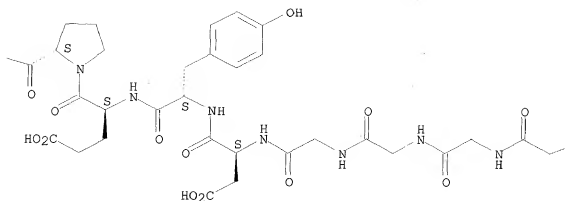
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SR CA  
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

PAGE 1-A



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\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

- 1 REFERENCES IN FILE CA (1947 TO DATE)
- 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
- 1 REFERENCES IN FILE CAPLUS (1947 TO DATE)

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REFERENCE 1: 136:382133

L3 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN  
RN 197518-27-7 REGISTRY  
CN D-Glutamic acid, N2-[[4-(1,1-dimethylethyl)phenyl]sulfonyl]-L-arginyl-(2R)-  
2-piperidinecarbonylglycylglycylglycylglycyl-N-methyl-.beta.-alanyl-L-  
.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-  
prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-  
alanyl- (9CI) (CA INDEX NAME)  
FS PROTEIN SEQUENCE; STEREOSEARCH  
SQL 18  
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modification	Bal-7	methyl<Me>
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HITS AT: 3-16

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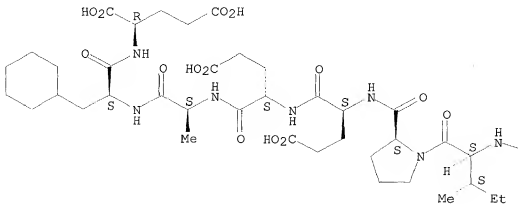
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SR CA

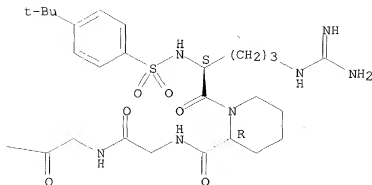
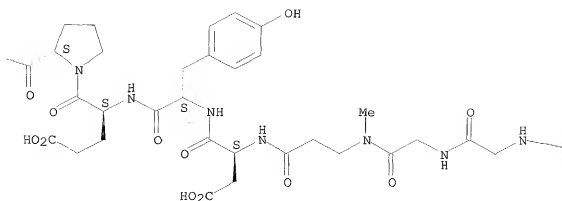
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

PAGE 1-A



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1 REFERENCES IN FILE CA (1947 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1947 TO DATE)

REFERENCE 1: 127:316126

L3 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN

RN 197518-05-1 REGISTRY

CN D-Glutamic acid, N2-[[4-(1,1-dimethylethyl)phenyl]sulfonyl]-L-arginyl-(2R)-

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2-piperidinecarbonylglycylglycylglycylglycyl-.beta.-alanyl-L-.alpha.-  
aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-  
.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl- (9CI)  
(CA INDEX NAME)

FS PROTEIN SEQUENCE; STEREOSEARCH

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uncommon	Bal-7	-
modification	Arg-1	undetermined modification
modification	Ala-17	cyclohexyl<Chx>

SEQ 1 RXGGGGXDYE PIPEEAAE

HITS AT: 3-16

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

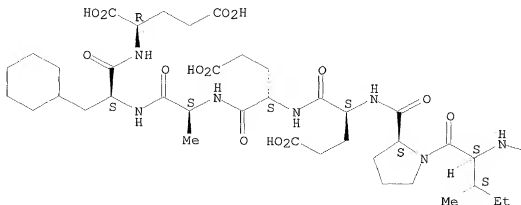
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SR CA

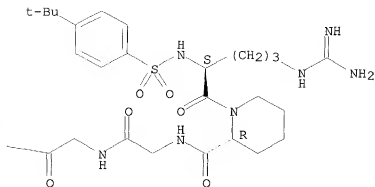
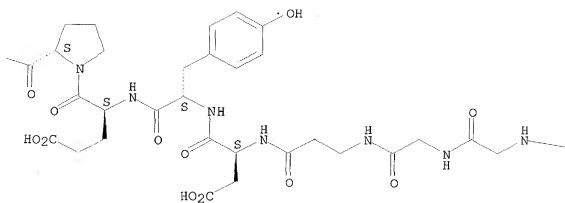
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

PAGE 1-A



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3 REFERENCES IN FILE CA (1947 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1947 TO DATE)

REFERENCE 1: 132:262009

REFERENCE 2: 130:297001

REFERENCE 3: 127:316126

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L3 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2003 ACS on STN  
RN 183969-28-0 REGISTRY  
CN D-Glutamic acid, N-[[1-[(3S)-6-[(aminoiminomethyl)amino]-3-[(3-cyclohexyl-D-alanyl-L-prolyl)amino]-2-oxohexyl]pyridiniumyl]acetyl]glycylglycylglycylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl- (9CI) (CA INDEX NAME)

FS PROTEIN SEQUENCE

SQL 19

NTE modified (modifications unspecified)

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HITS AT: 4-17

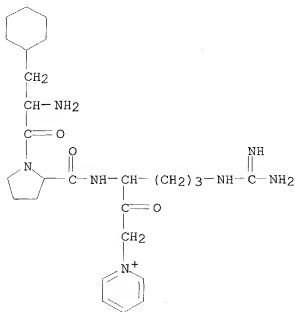
MF C97 H143 N22 O31

CI IDS

SR CA

LC STN Files: CA, CAPLUS

PAGE 1-A



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FILE LAST UPDATED: 10 Aug 2003 (20030810/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d stat que  
L3 4 SEA FILE=REGISTRY ABB=ON GGGG.DYEPIPEEA/SQSP  
L4 5 SEA FILE=HCAPLUS ABB=ON L3  
L5 157 SEA FILE=REGISTRY ABB=ON DYEPIPEEA/SQSP  
L6 2943 SEA FILE=REGISTRY ABB=ON CHA OR BBS OR PIP  
L7 6763 SEA FILE=REGISTRY ABB=ON CYCLOHEXYL(L)ALANINE OR PIPECOL?  
L9 19 SEA FILE=HCAPLUS ABB=ON L5  
L10 30518 SEA FILE=HCAPLUS ABB=ON L6 OR CHA OR BBS OR PIP  
L11 31240 SEA FILE=HCAPLUS ABB=ON CYCLOHEXYL(L)ALANINE OR PIPECOL? OR  
BENZENE(L)SULF? OR L7  
L12 7 SEA FILE=HCAPLUS ABB=ON L9 AND (L10 OR L11)  
L13 5 SEA FILE=HCAPLUS ABB=ON L12 NOT L4

=> d ibib abs hitrn 113 1-5

L13 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS ON STN  
ACCESSION NUMBER: 1995:926084 HCAPLUS  
DOCUMENT NUMBER: 123:340964  
TITLE: Preparation of hirudin-analog oligopeptide bivalent thrombin inhibitors  
INVENTOR(S): Konishi, Yasuo; Szewczuk, Zbigniew; Tsuda, Yuko  
PATENT ASSIGNEE(S): National Research Council Canada (NRC-CNRC), Can.  
SOURCE: PCT Int. Appl., 79 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9511921	A1	19950504	WO 1994-CA585	19941025
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB,				

Searched by M. Smith

Liu 09/529,232

GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ, VN  
RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

CA 2175388 AA 19950504 CA 1994-2175388 19941025  
AU 9479354 A1 19950522 AU 1994-79354 19941025  
EP 725797 A1 19960814 EP 1994-930133 19941025  
EP 725797 B1 20010110

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE  
AT 198603 E 20010115 AT 1994-930133 19941025  
ES 2153433 T3 20010301 ES 1994-930133 19941025  
US 6127337 A 20001003 US 1996-636698 19960628

PRIORITY APPLN. INFO.: GB 1993-21951 A 19931025  
GB 1994-12707 A 19940624  
WO 1994-CA585 W 19941025

OTHER SOURCE(S): MARPAT 123:340964

AB The title compds. R(R1)NCH(YE)COAZP [A = (un)substituted D- or L-imino acid residue, hydrophobic amino acid residue; E = H, guanidyl, amidino; P = oligopeptide of .gtoreq.6 amino or imino acid residues selected from any fibrinogen recognition exosite portion of a hirudin mol. or analog; R = (un)substituted (hetero)arylsulfonyl, (un)substituted arylsulfonyl, etc.; R1 = H, alkyl, alkoxyalkyl, aryl, aralkyl; Y = alkyl, aryl, aralkyl; Z = .gtoreq.12-atom (un)branched divalent bridge group], useful as antithrombotics, are prepd. The bulky active site inhibitor segment, hirudin, (sic) has been substituted by small nonsubstrate-type active site inhibitors of thrombin [e.g., dansyl-Arg-(D-pipecolic acid)]. The linker segment has also been modified using a combination of .omega.-amino acids to reduce the mol. wt. but retain sufficient length to span the two principal binding domains. Among the inhibitors prepd., dansyl-Arg-(D-pipecolic acid)-(12-aminododecanoic acid)-4-aminobutyric acid)-Asp-Tyr-Glu-Pro-Ile-Pro-Glu-Glu-Ala-(L-.beta.-cyclohexylalanine)-(D-Glu)-OH showed the highest affinity and displayed a competitive-type inhibition. The incorporation of the non-substrate type active site inhibitor segment and the linker of .omega.-amino acids into the bivalent thrombin inhibitors not only improved in-vitro thrombin inhibitory activity to the pM level, but overcame proteolytic susceptibility at the level of the normal scissile bond and conferred high in-vivo activity.

IT 159218-32-3P 159218-33-4P 159218-34-5P  
170429-44-4P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(prepn. of hirudin-analog oligopeptide bivalent thrombin inhibitors)

L13 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1995:503087 HCAPLUS

DOCUMENT NUMBER: 122:256412

TITLE: Trifunctional antithrombin and antiplatelet peptides

INVENTOR(S): Broersma, Robert J., Jr.; Owen, Thomas J.;

Krstenansky, John L.

PATENT ASSIGNEE(S): Merrell Dow Pharmaceuticals Inc., USA

SOURCE: PCT Int. Appl., 94 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

Searched by M. Smith

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9429349	A1	19941222	WO 1994-US5355	19940513
W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2164712	AA	19941222	CA 1994-2164712	19940513
AU 9470938	A1	19950103	AU 1994-70938	19940513
AU 685470	B2	19980122		
EP 702696	A1	19960327	EP 1994-920004	19940513
EP 702696	B1	20030730		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
CN 1124964	A	19960619	CN 1994-192393	19940513
HU 73187	A2	19960628	HU 1995-3530	19940513
JP 08511518	T2	19961203	JP 1994-501790	19940513
ZA 9403958	A	19950222	ZA 1994-3958	19940606
US 5681925	A	19971028	US 1995-502989	19950717
FI 9505905	A	19951208	FI 1995-5905	19951208
NO 9504991	A	19960215	NO 1995-4991	19951208
PRIORITY APPLN. INFO.:			US 1993-76066	A 19930618
			WO 1994-US5355	W 19940513
OTHER SOURCE(S):		MARPAT 122:256412		
GI				

Q1= Pro-B'-D-Cys-B2-B3-Gly-Asp-B4-Pro-D-Cys-B'

Q2= B'-D-Cys-B2'-B3-Gly-Asp-Nle-Pro-Ala-Asp-D-Cys-B'

AB Compds. of the formula: X-A-B-C-Y [X = amino-terminal residue selected from H, 1-2 C1-6 alkyl, 1-2 C2-10 acyl, carbobenzyloxyl, H2NC(NH), t-butyloxycarbonyl; A = peptide analog A1-A2-A3 (A1 = D-Phe, D-Phe, D-I-Tiq, D-3-Tiq, N-Me-D-Phe, D-**Cha**, D-Chg, D-Nag, D-Thg; A2 = Pro, **Tig**, Az; A3 = Arg, Lys, Orn, hArg); B = peptide analog Q1, Q2 (B1 = Gly, Ala, D-Ala, Val, D-Val, Gly-Gly; B2 = Gly, Gly-Gly, Gly-Gly-Gly, Gly-Gly-Gly-Gly, D-amino acid; B2' = Arg-Ile-Pro, Lys-Ile-Pro; B3 = Arg, hArg, N-Me-Arg, Lys; B4 = Nle, Phe, Met, **Cha**); C = peptide analog Asp-C1-C2-C3-C4-C5-C6-C7-C8-C9 (C1 = Phe, p-ClPhe, p-NO2Phe, Tha, Npa, Tyr, Trp; C2 = Glu, Asp; C3, C6, C7 = any amino acid; C4 = Ile, Val, Leu, Phe; C5 = Pro, Hyp, Sar, N-Me-Pgl, D-Ala; C8 = Tyr, Glu, Pro, Ala-**Cha**, Tyr-**Cha**, Tyr-Leu, Ala-Tyr; C9 = bond, Glu, D-Glu, Gln, Pro, Leu-Gln, Asp-Glu, Leu-Pro); Y = carboxyl-terminal residue selected from OH, C1-C6 alkoxy, amino, mono- or di-(C1-C4) alkyl substituted amino, benzylamino], or pharmaceutically acceptable salts thereof, are useful anticoagulant agents. The above compds. are useful for treating acute post-angioplasty occlusion, extracorporeal circulation-induced cytopenia, developing myocardial infarction, and post-fibrinolytic therapy occlusion. The peptides of the invention combine thrombin inhibition with antagonism of platelet

GPIIb/IIIa receptors in a single hybrid peptide. The peptides contain a catalytic site inhibitor of thrombin attached to an anion-binding exosite inhibitor of thrombin via a linker moiety containing a connecting bridge and a cyclic RGD-X sequence as the platelet GPIIb/IIIa receptor antagonist.

IT 162435-93-0 162435-94-1 162435-95-2  
162435-96-3 162435-97-4 162435-98-5  
162435-99-6 162436-00-2 162436-01-3  
162491-37-4

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)  
(antithrombin and antiplatelet trifunctional peptides with thrombin-inhibiting and cyclic RGD-X sequence segments)

IT 162435-85-0P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(antithrombin and antiplatelet trifunctional peptides with thrombin-inhibiting and cyclic RGD-X sequence segments)

IT 162435-86-1 162435-87-2 162435-88-3

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(antithrombin and antiplatelet trifunctional peptides with thrombin-inhibiting and cyclic RGD-X sequence segments)

L13 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2003 ACS ON STN

ACCESSION NUMBER: 1995:205649 HCAPLUS

DOCUMENT NUMBER: 122:303

TITLE: Design of Potent Bivalent Thrombin Inhibitors Based on Hirudin Sequence: Incorporation of Nonsubstrate-Type Active Site Inhibitors

AUTHOR(S): Tsuda, Yuko; Cygler, Mirosław; Gibbs, Bernard F.; Pedyczak, Artur; Fethiere, James; Yue, Shi Yi; Konishi, Yasuo

CORPORATE SOURCE: Biotechnology Research Institute, National Research Council of Canada, Montreal, QC, H4P 2R2, Can.

SOURCE: Biochemistry (1994), 33(48), 14443-51

CODEN: BICHAW; ISSN: 0006-2960

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Hirudin from medicinal leech is the most potent and specific thrombin inhibitor from medicinal leech with a  $K_i$  value of 2.2.times.10<sup>-14</sup> M. It consists of an active site blocking moiety, hirudin1-48, a fibrinogen-recognition exo-site binding moiety, hirudin55-65, and a linker, hirudin49-54, connecting these inhibitor moieties. Synthetic inhibitors were designed based on the C-terminal portion of hirudin. The bulky active site blocking moiety, hirudin1-48, was replaced by small nonsubstrate-type active site inhibitors of thrombin, e.g., dansyl-Arg-(D-pipecolic acid). The linker moiety was replaced by .omega.-amino acids of (12-aminododecanoic acid)-(4-aminobutyric acid), and hirudin55-65 was used as a fibrinogen-recognition exo-site binding moiety in most of the inhibitors. The crystal structure of the inhibitor in complex with human .alpha.-thrombin showed that dansyl, Arg, and D-pipecolic acid of the active site blocking moiety occupy S3, S1, and S2 subsites of thrombin, resp., and were therefore designated as P3, P1, and P2 residues. The use of dansyl-Arg-(D-pipecolic acid) improved the affinity ( $K_i$ ) of the inhibitor 10-100-fold (down to 1.70.times.10<sup>-11</sup> M) compared to that of the similar compds. having D-Phe-Pro-Arg as their substrate-type inhibitor moiety ( $K_i$  = 10<sup>-9</sup>-10<sup>-10</sup> M). The linker connected to P2 residue

eliminated the scissile peptide bond. The inhibitor was also stable against human plasma proteases. Further inhibitor design revealed that the toxic dansyl group could be replaced by 4-tert-butylbenzenesulfonyl group and 1- or 2-naphthalenesulfonyl group for in vivo studies. In addn., the replacement of hirudin55-65 with [Tyr56,Pro58,Ala63,Cha64,D-Glu65]hirudin55-65 improved the affinity of the inhibitors ( $K_i = 2.0 \times 10^{-12}$  M) to the level 10-fold less potent than recombinant hirudin ( $K_i = 2.3 \times 10^{-13}$  M).

IT 159218-32-3 159218-33-4 159218-34-5

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(design of potent bivalent thrombin inhibitors based on hirudin sequence by incorporation of nonsubstrate-type active site inhibitors)

L13 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1994:645748 HCAPLUS

DOCUMENT NUMBER: 121:245748

TITLE: Binding of Fluorescent and Spin-Labeled C-Terminal Hirudin Analogs to Thrombin

AUTHOR(S): Sankarapandi, Sornampillai; Woodford, Judith K.; Krstenansky, John L.; Berliner, Lawrence J.

CORPORATE SOURCE: Department of Chemistry, Ohio State University, Columbus, OH, 43210-1173, USA

SOURCE: Journal of Medicinal Chemistry (1994), 37(22), 3855-8

CODEN: JMCMAR; ISSN: 0022-2623

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Synthetic peptides based on the sequence of the neg. charged carboxyl tail of hirudin exhibit anticoagulant activity. Several antithrombin agents are being developed by chem. and structural optimization of these "hirupeptides". The present work demonstrates the design and use of novel spin-labeled and fluorescent-labeled C-terminal hirudin analogs to study the interactions of these antithrombin agents with thrombin in soln. Three labeled hirulabels were synthesized based upon the amino acid sequence of the antithrombin agent MDL 28050, X-NH-(CH<sub>2</sub>)<sub>7</sub>-CO-Asp-Tyr-Glu-Pro-Ile-Pro-Glu-Glu-Ala-**Cha**-D-Glu-OH, where X = anthraniloxy, 1,5-dansyl, or 3-carbamoyl-2,2,5,5-tetramethyl-3-pyrroline-1-oxyl. The modifications did not significantly alter the potency of these inhibitors which showed  $K_i$  values of 100 nM. Their interactions with human and bovine thrombin were studied by ESR and fluorescence techniques. The spin-labeled hirupeptide was able to discern subtle differences in binding to human vs. bovine thrombin. The 8-aminooctanoic acid spacer arm placed the nitroxide moieties near the active site, near regions of the autolysis loops which differentiates between human .alpha.- and .gamma.-thrombin. It was also able to discern paramagnetic quenching and fluorescence energy transfer interactions, resp., between covalently attached spin labels and fluorescent probes at the active site Ser 195 and the fluorophore on the hirupeptide.

IT 158507-09-6P 158507-10-9P 158507-11-0P

RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)

(binding of fluorescent and spin-labeled C-terminal hirudin analogs to thrombin)

IT 158507-12-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(in fluorescent and spin-labeled C-terminal hirudin analogs prepn.)

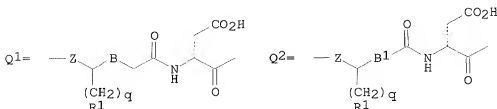
Liu 09/529,232

L13 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2003 ACS on STN  
ACCESSION NUMBER: 1992:408491 HCAPLUS  
DOCUMENT NUMBER: 117:8491  
TITLE: Preparation of analogs of hirudin having antiplatelet activity  
INVENTOR(S): Krstenansky, John L.; Broersma, Robert J., Jr.  
PATENT ASSIGNEE(S): Merrell Dow Pharmaceuticals, Inc., USA  
SOURCE: Eur. Pat. Appl., 19 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 468448	A2	19920129	EP 1991-112331	19910723
EP 468448	A3	19920408		
EP 468448	B1	19960612		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AU 9181110	A1	19920130	AU 1991-81110	19910718
AU 640502	B2	19930826		
ZA 9105658	A	19920527	ZA 1991-5658	19910718
AT 139121	E	19960615	AT 1991-112331	19910723
ES 2090181	T3	19961016	ES 1991-112331	19910723
JP 04234327	A2	19920824	JP 1991-206241	19910724
JP 3264283	B2	20020311		
US 5574012	A	19961112	US 1995-444618	19950519
PRIORITY APPLN. INFO.:			US 1990-557289	A 19900724
			US 1991-714547	B1 19910611
			US 1994-255846	B1 19940608

OTHER SOURCE(S): MARPAT 117:8491

GI



AB XA1A2A3A4A5A6A7A8A9A10A11Y [I; X = H, alkyl, acyl, PhCH2CO, H2NC(:NH), Me3CO2C; A1 = bond, 1-11 amino acid residues; A2 = Q1, Q2; Z = bond, (alkyl)imino; q = 0-5; R1 = NH2, NHC(:NH)NH2; B = CONR, NRCO, CH2NR, CH2CH2, CH:CH, CH2O, CH2S, CH2SO, CH2SO2, etc.; R = H, C1-4 alkyl; B1 = phenylene, cyclohexylene; A3 = Phe, .beta.-(2- or 3-thienyl)alanyl, .beta.-(2- or 2-naphthyl)alanyl, .beta.-(2-, 3-, or 4-pyridyl)alanyl, Tyr, Trp, etc.; A4 = Glu, Asp, Ser(OSO3H), Ser(OPO3H), (homo)cysteic acid residue, etc.; A5, A8 = amino acid residues; A6 = Ile, Val, Leu, Nle, Phe; A7 = Pro, dehydropyrol, D-Ala, Sar, thiazolidine-4-carboxylate, etc.; A10 = Tyr, Trp, Phe, Leu, Nle, Ile, Val, Cha, Pro, dipeptide contg. 1 of the preceding residues; Cha = cyclohexylalanine residue; A11 = bond, peptide fragment contg. 1-5 amino acid residues; Y = OH, alkoxy, (alkyl)amino, benzylamino, were prepd.

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Thus, 5-GP-Gly-Asp-Trp-Glu-Pro-Ile-Pro-Glu-Glu-Ala-**Cha**-Glu-OH (5-GP = 5-guanidinopentyl), was prepd. by solid phase coupling using Me302C-protected amino acids followed by condensation of the aminopentyl intermediate with O-methylisourea. I showed dog antiplatelet activity with IC50 of 6-280 .mu.M.

IT **141702-47-8P 141702-49-0P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as anticoagulant)

=> select hit rn 113 1-5  
E1 THROUGH E24 ASSIGNED

=> fil reg  
FILE 'REGISTRY' ENTERED AT 16:11:56 ON 11 AUG 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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Property values tagged with IC are from the ZIC/VINITI data file  
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STRUCTURE FILE UPDATES: 10 AUG 2003 HIGHEST RN 563979-18-0  
DICTIONARY FILE UPDATES: 10 AUG 2003 HIGHEST RN 563979-18-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STnote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s e1-e24

- 1 159218-32-3/BI  
(159218-32-3/RN)
- 1 159218-33-4/BI  
(159218-33-4/RN)
- 1 159218-34-5/BI  
(159218-34-5/RN)
- 1 141702-47-8/BI  
(141702-47-8/RN)
- 1 141702-49-0/BI  
(141702-49-0/RN)
- 1 158507-09-6/BI  
(158507-09-6/RN)
- 1 158507-10-9/BI  
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- 1 158507-11-0/BI  
(158507-11-0/RN)
- 1 158507-12-1/BI  
(158507-12-1/RN)
- 1 162435-85-0/BI  
(162435-85-0/RN)
- 1 162435-86-1/BI

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Liu 09/529,232

(162435-86-1/RN)  
1 162435-87-2/BI  
(162435-87-2/RN)  
1 162435-88-3/BI  
(162435-88-3/RN)  
1 162435-93-0/BI  
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1 162436-00-2/BI  
(162436-00-2/RN)  
1 162436-01-3/BI  
(162436-01-3/RN)  
1 162491-37-4/BI  
(162491-37-4/RN)  
1 170429-44-4/BI  
(170429-44-4/RN)

L14 24 (159218-32-3/BI OR 159218-33-4/BI OR 159218-34-5/BI OR 141702-47-8/BI OR 141702-49-0/BI OR 158507-09-6/BI OR 158507-10-9/BI OR 158507-11-0/BI OR 158507-12-1/BI OR 162435-85-0/BI OR 162435-86-1/BI OR 162435-87-2/BI OR 162435-88-3/BI OR 162435-93-0/BI OR 162435-94-1/BI OR 162435-95-2/BI OR 162435-96-3/BI OR 162435-97-4/BI OR 162435-98-5/BI OR 162435-99-6/BI OR 162436-00-2/BI OR 162436-01-3/BI OR 162491-37-4/BI OR 170429-44-4/BI)

=> s l14 and l5

L15 24 L14 AND L5

=> d rn cn lc nte sql kwic can tot l15

L15 ANSWER 1 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 170429-44-4 REGISTRY

CN D-Glutamic acid, N2-(1-naphthalenylsulfonyl)-L-arginyl-(2R)-2-piperidinecarbonyl-12-aminodecanoyl-4-aminobutanoyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN D-Glutamic acid, N-[3-cyclohexyl-N-[N-[N-[N-[1-[N-[1-[N-[N-[N-[4-[[12-[[N2-(1-naphthalenylsulfonyl)-L-arginyl-D-2-piperidinecarbonyl]amino]-1-oxododecyl]amino]-1-oxobutyl]-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-L-alanyl]-

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified (modifications unspecified)

type	location	description
uncommon	Nle-2	-

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uncommon           Oaa-3           -           -  
uncommon           Oaa-4           -           -

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SQL 15  
RN 170429-44-4 REGISTRY

SEQ 1 RXXXDYEPIP EEAFE  
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HITS AT: 5-13

REFERENCE 1: 123:340964

L15 ANSWER 2 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN  
RN 162491-37-4 REGISTRY  
CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglucyl-L-cysteinyl-L-arginyl-L-isoleucyl-L-prolyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-L-alanyl-L-.alpha.-aspartyl-L-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.17)-disulfide (9CI) (CA INDEX NAME)  
LC STN Files: CA, CAPLUS, USPATFULL  
NTE modified (modifications unspecified)

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type           location           description  
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bridge           Cys-6           - Cys-17           disulfide bridge  
uncommon           Nle-13           -           -  
modification   Ala-28           -           cyclohexyl<Chx>  
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SQL 29  
RN 162491-37-4 REGISTRY

SEQ 1 FPRPGCRIPR GDXPADCGDY EPIPEEAAE  
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HITS AT: 19-27

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 122:256412

L15 ANSWER 3 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN  
RN 162436-01-3 REGISTRY  
CN D-Glutamic acid, N-methyl-D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglucyl-L-cysteinylglycyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-L-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)  
LC STN Files: CA, CAPLUS, USPATFULL  
NTE modified (modifications unspecified)

-----  
type           location           description  
-----  
bridge           Cys-6           - Cys-13           disulfide bridge  
uncommon           Nle-11           -           -  
modification   Phe-1           -           methyl<Me>  
modification   Ala-24           -           cyclohexyl<Chx>  
-----

Searched by M. Smith

Liu 09/529,232

SQL 25

RN 162436-01-3 REGISTRY

SEQ 1 FPRPGCGRGD XPCGDYEP EEAEE

HITS AT: 15-23

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 122:256412

L15 ANSWER 4 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162436-00-2 REGISTRY

LC D-Glutamic acid, 1-[(1,2,3,4-tetrahydro-3-isoquinolinyl)carbonyl]-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteinylglycyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isooleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (5.fwdarw.12)-disulfide, (S)- (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	-----	location	-----	description
bridge	Cys-6	-	Cys-13	disulfide bridge
uncommon	Iqc-1	-	-	-
uncommon	Nle-11	-	-	-
modification	Ala-24	-	-	cyclohexyl<Chx>

SQL 25

RN 162436-00-2 REGISTRY

SEQ 1 XPRPGCGRGD XPCGDYEP EEAEE

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 5 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-99-6 REGISTRY

LC D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteinyl-D-prolyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isooleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	-----	location	-----	description
bridge	Cys-6	-	Cys-13	disulfide bridge
uncommon	Nle-11	-	-	-
modification	Ala-24	-	-	cyclohexyl<Chx>

SQL 25

RN 162435-99-6 REGISTRY

SEQ 1 FPRPGCPRGD XPCGDYEP EEAEE

Searched by M. Smith

Liu 09/529,232

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 6 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-98-5 REGISTRY

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteiny-L-D-threonyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	-----	location	-----	description
bridge	Cys-6	-	Cys-13	disulfide bridge
uncommon	Nle-11	-	-	-
modification	Ala-24	-	-	cyclohexyl<Chx>

SQL 25

RN 162435-98-5 REGISTRY

SEQ 1 FPRPGCTRGD XPCGDYEP EEAEE

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 7 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-97-4 REGISTRY

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteiny-L-D-valyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	-----	location	-----	description
bridge	Cys-6	-	Cys-13	disulfide bridge
uncommon	Nle-11	-	-	-
modification	Ala-24	-	-	cyclohexyl<Chx>

SQL 25

RN 162435-97-4 REGISTRY

SEQ 1 FPRPGCVRGD XPCGDYEP EEAEE

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 8 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-96-3 REGISTRY

Searched by M. Smith

Liu 09/529,232

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteinyl-D-tyrosyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	-----	location	-----	description
bridge	Cys-6	-	Cys-13	disulfide bridge
uncommon	Nle-11	-		-
modification	Ala-24	-		cyclohexyl<Chx>

SQL 25

RN 162435-96-3 REGISTRY

SEQ 1 FPRPGCYRGD XPCGDYEPID EEAEE

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 9 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-95-2 REGISTRY

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteinylglycyl-L-arginylglycyl-L-.alpha.-aspartyl-3-cyclohexyl-L-alanyl-L-prolyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	-----	location	-----	description
bridge	Cys-6	-	Cys-13	disulfide bridge
modification	Ala-11	-		cyclohexyl<Chx>
modification	Ala-24	-		cyclohexyl<Chx>

SQL 25

RN 162435-95-2 REGISTRY

SEQ 1 FPRPGCGRD APCGDYEPID EEAEE

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 10 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-94-1 REGISTRY

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteinylglycyl-L-arginylglycyl-L-.alpha.-aspartyl-L-methionyl-L-prolyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

Searched by M. Smith

Liu 09/529,232

NTE modified

type	-----	location	-----	description
bridge		Cys-6	- Cys-13	disulfide bridge
modification		Ala-24	-	cyclohexyl<Chx>

SQL 25

RN 162435-94-1 REGISTRY

SEQ 1 FPRPGCGRGD MPCGDYEP EEAEE

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 11 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-93-0 REGISTRY

CN L-Aspartic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-L-cysteinylglycyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-L-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoileucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-L-tyrosyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE

type	-----	location	-----	description
bridge		Cys-6	- Cys-13	disulfide bridge
uncommon		Nle-11	-	-

SQL 25

RN 162435-93-0 REGISTRY

SEQ 1 FPRPGCGRGD XPCGDYEP EEAAYD

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 12 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-88-3 REGISTRY

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglycyl-D-cysteinyl-L-arginyl-L-isoileucyl-L-prolyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-L-alanyl-L-.alpha.-aspartyl-D-cysteinylglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoileucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.17)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified (modifications unspecified)

type	-----	location	-----	description
bridge		Cys-6	- Cys-17	disulfide bridge
uncommon		Nle-13	-	-
modification		Ala-28	-	cyclohexyl<Chx>

SQL 29

Searched by M. Smith

Liu 09/529,232

RN 162435-88-3 REGISTRY

SEQ 1 FPRPGCRIPR GDXPADCGDY EPIPEEAAE

HITS AT: 19-27

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 122:256412

L15 ANSWER 13 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-87-2 REGISTRY

CN D-Glutamic acid, D-2-phenylglycyl-L-prolyl-L-arginyl-L-prolylglucyl-D-cysteinyglycyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-D-cysteinyglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	location	description
bridge	Cys-6 - Cys-13	disulfide bridge
uncommon	Phg-1	-
uncommon	Nle-11	-
modification	Ala-24	cyclohexyl<Chx>

SQL 25

RN 162435-87-2 REGISTRY

SEQ 1 XPRPGCGRGD XPCGDYEP EEEAE

HITS AT: 15-23

REFERENCE 1: 122:256412

L15 ANSWER 14 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 162435-86-1 REGISTRY

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolylglucyl-D-cysteinyglycyl-L-arginylglycyl-L-.alpha.-aspartyl-L-phenylalanyl-L-prolyl-D-cysteinyglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified

type	location	description
bridge	Cys-6 - Cys-13	disulfide bridge
modification	Ala-24	cyclohexyl<Chx>

SQL 25

RN 162435-86-1 REGISTRY

SEQ 1 FPRPGCGRGD FPCGDYEP EEEAE

HITS AT: 15-23

Searched by M. Smith

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REFERENCE 1: 122:256412

L15 ANSWER 15 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN **162435-85-0** REGISTRY

CN D-Glutamic acid, D-phenylalanyl-L-prolyl-L-arginyl-L-prolyl-glycyl-D-cysteinyglycyl-L-arginylglycyl-L-.alpha.-aspartyl-L-norleucyl-L-prolyl-D-cysteinyglycyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, cyclic (6.fwdarw.13)-disulfide (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL  
NTE modified (modifications unspecified)

type	-----	location	-----	description
bridge	Cys-6	-	Cys-13	disulfide bridge
uncommon	Nle-11	-	-	-
modification	Ala-24	-	-	cyclohexyl<Chx>

SQL 25

RN **162435-85-0** REGISTRY

SEQ 1 FPRPGCGRGD XPCGDYEPIP EEAEE

HITS AT: 15-23

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 122:256412

L15 ANSWER 16 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN **159218-34-5** REGISTRY

CN D-Glutamic acid, N2-[[4-(1,1-dimethylethyl)phenyl]sulfonyl]-L-arginyl-(2R)-2-piperidinecarbonyl-12-aminododecanoyl-4-aminobutanoyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN D-Glutamic acid, N-[3-cyclohexyl-N-[N-[N-[N-[1-[N-[1-[N-[N-[N-[4-[[12-[[[2-[[[4-(1,1-dimethylethyl)phenyl]sulfonyl]-L-arginyl-D-2-piperidinecarbonyl]amino]-1-oxododecyl]amino]-1-oxobutyl]-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-L-alanyl]-

OTHER NAMES:

CN P 553

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

NTE modified (modifications unspecified)

type	-----	location	-----	description
uncommon	Pip-2	-	-	-
uncommon	Oaa-3	-	-	-
uncommon	Oaa-4	-	-	-
stereo	Pip-2	-	-	D

SQL 15

RN **159218-34-5** REGISTRY

Searched by M. Smith

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SEQ 1 RXXXDYEP EAAE

HITS AT: 5-13

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 134:65979

REFERENCE 2: 123:340964

REFERENCE 3: 123:340841

REFERENCE 4: 122:303

L15 ANSWER 17 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 159218-33-4 REGISTRY

CN D-Glutamic acid, N2-(2-naphthalenylsulfonyl)-L-arginyl-(2R)-2-piperidinecarbonyl-12-aminododecanoyl-4-aminobutanoyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-iso-leucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl-, monoacetate (salt) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN D-Glutamic acid, N-[3-cyclohexyl-N-[N-[N-[1-[N-[1-[N-[N-[N-[4-[[12-[[N2-(2-naphthalenylsulfonyl)-L-arginyl-D-2-piperidinecarbonyl]amino]-1-oxododecyl]amino]-1-oxobutyl]-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-iso-leucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-L-alanyl]-, monoacetate (salt)

OTHER NAMES:

CN P 551

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

NTE modified (modifications unspecified)

type	location			description
uncommon	Pip-2	-	-	
uncommon	Oaa-3	-	-	
uncommon	Oaa-4	-	-	
stereo	Pip-2	-	D	

SQL 15

RN 159218-33-4 REGISTRY

SEQ 1 RXXXDYEP EAAE

HITS AT: 5-13

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

SEQ 1 RXXXDYEP EAAE

HITS AT: 5-13

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

SEQ 1 RXXXDYEP EAAE

HITS AT: 5-13

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

Liu 09/529,232

REFERENCE 1: 129:197800

REFERENCE 2: 123:340964

REFERENCE 3: 123:340841

REFERENCE 4: 122:303

L15 ANSWER 18 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 159218-32-3 REGISTRY

CN D-Glutamic acid, N2-[[5-(dimethylamino)-1-naphthalenyl]sulfonyl]-L-arginyl-(2R)-2-piperidinecarbonyl-12-aminododecanoyl-4-aminobutanoyl-L-.alpha.-aspartyl-L-tyrosyl-L-.alpha.-glutamyl-L-prolyl-L-isoleucyl-L-prolyl-L-.alpha.-glutamyl-L-.alpha.-glutamyl-L-alanyl-3-cyclohexyl-L-alanyl- (9CI)  
(CA INDEX NAME)

OTHER CA INDEX NAMES:

CN D-Glutamic acid, N-[3-cyclohexyl-N-[N-[N-[1-[N-[1-[N-[N-[N-[4-[[12-[[N2-[[5-(dimethylamino)-1-naphthalenyl]sulfonyl]-L-arginyl-D-2-piperidinecarbonyl]amino]-1-oxododecyl]amino]-1-oxobutyl]-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-L-alanyl]-

OTHER NAMES:

CN P 535

LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL

NTE modified (modifications unspecified)

type	location		description
uncommon	Pip-2	-	-
uncommon	Oaa-3	-	-
uncommon	Oaa-4	-	-
stereo	Pip-2	-	D

SQL 15

RN 159218-32-3 REGISTRY

SEQ 1 RXXXDYEPPI EEAEE

HITS AT: 5-13

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 123:340964

REFERENCE 2: 123:340841

REFERENCE 3: 122:303

L15 ANSWER 19 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 158507-12-1 REGISTRY

CN D-Glutamic acid, N-[N-[N-[N-[1-[N-[1-[N-[N-[N-(8-amino-1-oxooctyl)-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-3-cyclohexyl-L-alanyl]- (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS

NTE modified (modifications unspecified)

type	location	description
------	----------	-------------

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uncommon	Oaa-1	-	-
modification	Ala-11	-	cyclohexyl<Chx>

SQL 12  
RN 158507-12-1 REGISTRY

SEQ 1 XDYEPIPEEA AE

HITS AT: 2-10

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 121:245748

L15 ANSWER 20 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 158507-11-0 REGISTRY

CN D-Glutamic acid, N-[3-cyclohexyl-N-[N-[N-[1-[N-[1-[N-[N-[N-[8-[[[2,5-dihydro-2,2,5,5-tetramethyl-1-oxy-1H-pyrrol-3-yl]carbonyl]amino]-1-oxooctyl]-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-L-alanyl]- (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS

NTE modified (modifications unspecified)

type	location		description
uncommon	Oaa-1	-	-
stereo	Glu-12	-	D

SQL 12  
RN 158507-11-0 REGISTRY

SEQ 1 XDYEPIPEEA AE

HITS AT: 2-10

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 121:245748

L15 ANSWER 21 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 158507-10-9 REGISTRY

CN D-Glutamic acid, N-[N-[N-[N-[N-[1-[N-[1-[N-[N-[N-[8-[(2-aminobenzoyl)amino]-1-oxooctyl]-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-3-cyclohexyl-L-alanyl]- (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS

NTE modified (modifications unspecified)

type	location		description
uncommon	Oaa-1	-	-
modification	Oaa-1	-	2-aminobenzoyl<2Abz>
modification	Ala-11	-	cyclohexyl<Chx>

SQL 12  
RN 158507-10-9 REGISTRY

Searched by M. Smith

Liu 09/529,232

SEQ 1 XDYEPIPEEA AE

HITS AT: 2-10

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 121:245748

L15 ANSWER 22 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 158507-09-6 REGISTRY

CN D-Glutamic acid, N-[3-cyclohexyl-N-[N-[N-[1-[N-[1-[N-[N-[N-[8-[[5-(dimethylamino)-1-naphthalenyl]amino]-1-oxooctyl]-L-.alpha.-aspartyl]-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-L-alanyl]- (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS

NTE modified (modifications unspecified)

type	location	description
uncommon	Oaa-1	-
modification	Oaa-1	undetermined modification
modification	Ala-11	cyclohexyl<Chx>

SQL 12

RN 158507-09-6 REGISTRY

SEQ 1 XDYEPIPEEA AE

HITS AT: 2-10

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 121:245748

L15 ANSWER 23 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN 141702-49-0 REGISTRY

CN D-Glutamic acid, N-[N-[N-[N-[1-[N-[1-[N-[N-[N-[5-[(aminoiminomethyl)amino]pentyl]glycyl]-L-.alpha.-aspartyl]-O-methyl-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-3-cyclohexyl-L-alanyl]- (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified (modifications unspecified)

type	location	description
modification	Gly-1	undetermined modification
modification	Tyr-3	methyl<Me>
modification	Ala-11	cyclohexyl<Chx>

SQL 12

RN 141702-49-0 REGISTRY

SEQ 1 GDYEPIPEEA AE

HITS AT: 2-10

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

Liu 09/529,232

REFERENCE 1: 117:8491

L15 ANSWER 24 OF 24 REGISTRY COPYRIGHT 2003 ACS on STN

RN **141702-47-8** REGISTRY

CN D-Glutamic acid, N-[N-[N-[N-[N-[1-[N-[1-[N-[N-[N-(5-aminopentyl)glycyl]-L-.alpha.-aspartyl]-O-methyl-L-tyrosyl]-L-.alpha.-glutamyl]-L-prolyl]-L-isoleucyl]-L-prolyl]-L-.alpha.-glutamyl]-L-.alpha.-glutamyl]-L-alanyl]-3-cyclohexyl-L-alanyl]- (9CI) (CA INDEX NAME)

LC STN Files: CA, CAPLUS, USPATFULL

NTE modified (modifications unspecified)

type	location	description
modification	Gly-1	undetermined modification
modification	Tyr-3	methyl<Me>
modification	Ala-11	cyclohexyl<Chx>

SQL 12

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SEQ 1 GDYEPIPEEA AE

HITS AT: 2-10

\*\*RELATED SEQUENCES AVAILABLE WITH SEQLINK\*\*

REFERENCE 1: 117:8491